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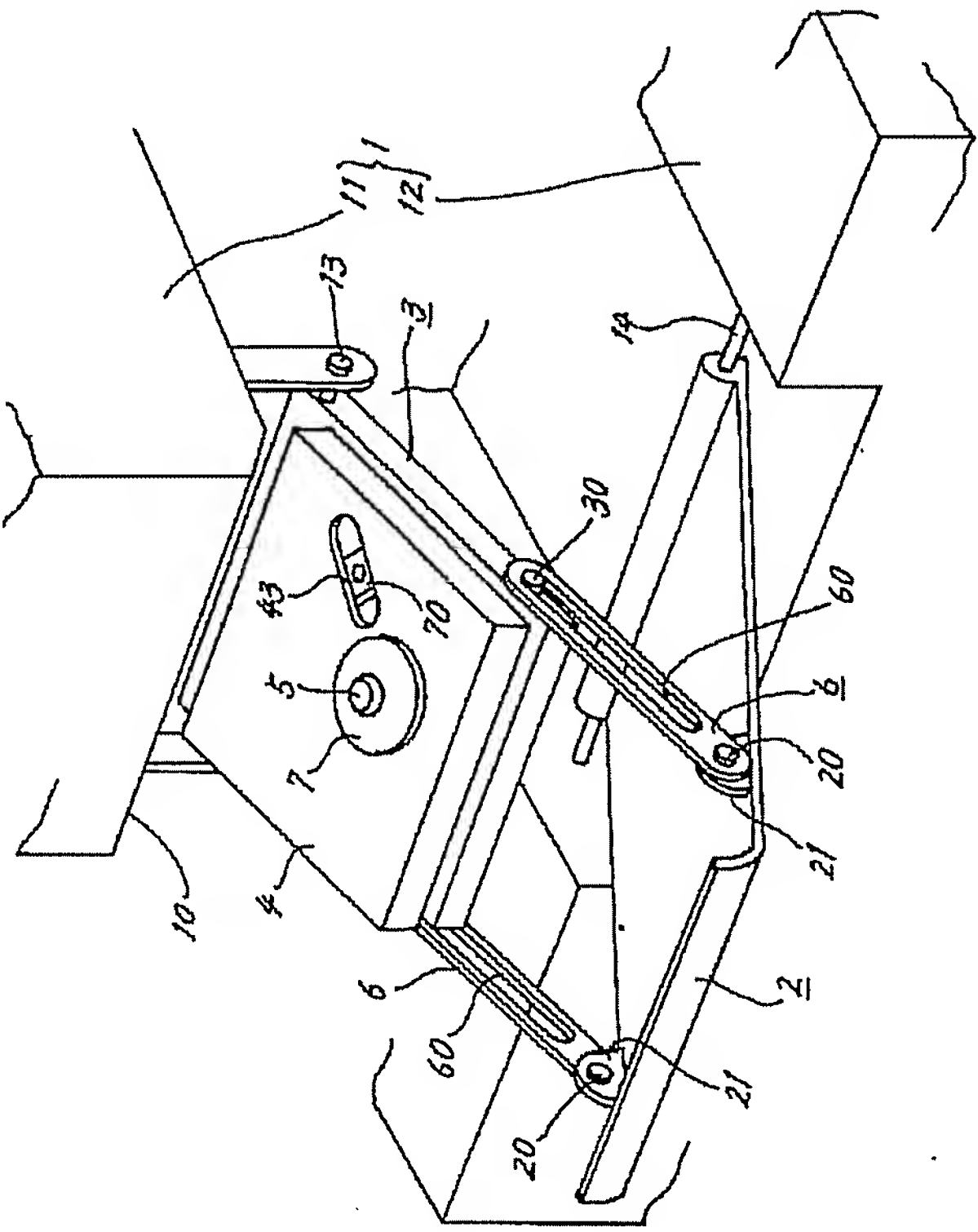
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(54) 【発明の名称】 ディスク記録再生装置

(57) 【要約】

【課題】 ディスクを立てて回転させる装置に於いて、ディスクを正規の位置に容易に装着する。

【解決手段】 キャビネット1は、前面が開口10し、内部にディスクDを前面に対向して立てた状態で保持するシャーシ3を設けており、該開口10を覆うフロントパネル2がキャビネット1の下端部に枢支14されている。シャーシ3は上端部がキャビネット1に枢支13され、キャビネット1内を回動自在に設けられ、シャーシ3の下端部と、フロントパネル2の自由端部の間には、フロントパネル2の開閉に応じて、シャーシ3を回動させるリンク6が架設されている。フロントパネル2の開き方向の回転に応じて、シャーシ3は上向きに回動し、開口10から露出する。



# 【特許請求の範囲】

【請求項1】 前面が開口(10)したキャビネット(1)内に、ディスクDをキャビネット(1)の前面に対向させ立てた状態で保持するシャーシ(3)を設け、該開口(10)を覆うフロントパネル(2)がキャビネット(1)の下端部に枢支(14)されたディスク記録再生装置に於いて、シャーシ(3)は上端部がキャビネット(1)内に枢支(13)され、フロントパネル(2)の回動面内にて、回動自在に設けられ、

シャーシ(3)の自由端部と、フロントパネル(2)の自由端部の間には、フロントパネル(2)の開閉に応じて、シャーシ(3)を回動させるリンク(6)が架設され、フロントパネル(2)の開き方向の回転に応じて、シャーシ(3)は枢支部(13)を中心に回動し、開口(10)から露出することを特徴とするディスク記録再生装置。

【請求項2】 ディスクDはシャーシ(3)上のトレイ(4)に保持され、シャーシ(3)は弾性片(44)を介してトレイ(4)を支持する請求項1に記載のディスク記録再生装置。

# 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 本発明は、キャビネット内にディスクを縦置きに収納して記録再生を行なうディスク記録再生装置に関するものである。

## 【0002】

【従来の技術】 この種のディスク記録再生装置には、外観上のデザイン及び奥行き寸法の薄型化に鑑みて、ディスクを立てて回転させ、記録再生を行うものが知られている。具体的には、図7(a)、(b)に示すものがある。これは、前面が開口(10)したキャビネット(1)の奥部に、シャーシ(3)を垂直に設けている。シャーシ(3)上には、ディスクDを保持するトレイ(4)が、防振ゴム等から成る弾性片(44)を介して取り付けられている。キャビネット(1)の下端部には、開口(10)を覆うフロントパネル(2)が枢支(14)され、該フロントパネル(2)の裏面には、ディスクDが軽く保持される載せ板(25)が圧縮バネ(26)を介して取り付けられている。

【0003】 トレイ(4)には、ディスクDを回転させるターンテーブル(7)及び記録再生に必要な部品が設けられており、トレイ(4)にディスクが取り付けられた状態で、ディスクDが回転し、記録再生が可能となる。ターンテーブル(7)上には、ディスクDの中心孔に緊密に嵌合して、ディスクを保持するチャック部(5)が設けられている。ディスクをトレイ(4)に取り付けるには、図7(a)に示すように、ディスクを載せ板(25)に載せ、フロントパネル(2)を閉じ方向に回転させる。図7(b)に示すように、フロントパネル(2)が閉じた状態にて、更に軽くフロントパネル(2)を押し込むと、圧縮バネ(26)に付勢された載せ板(25)が、ディスクDをチャック部(5)に向けて押圧する。ディスクDは、中心部がチャック部

(5)に緊密に嵌合して、ターンテーブル(7)上に取り付けられる。フロントパネル(2)から指を離すと、載せ板(25)はディスクDから僅かに離間し、ディスクDの回転を妨げない。この状態で、ディスクが回転し、記録再生される。

## 【0004】

【発明が解決しようとする課題】 従来の装置では、フロントパネル(2)の裏面にディスクを載置し、フロントパネル(2)を閉じ方向に回転させて、ディスクをチャック部(5)に向けて押圧付勢することにより、ディスクをチャック部(5)に取り付ける。この場合、フロントパネル(2)の裏面に、ディスクを載置した位置が正規の位置から少しでもずれると、ディスクがチャック部(5)に取り付けられない虞れがある。ディスクには直径12cmと8cmの2種類があるが、特に小径の8cmのディスクは、フロントパネル(2)の裏面に、位置がズレて取り付けられる可能性が高く、チャック部(5)に正しく取り付けられない虞れが強い。本発明は、ディスクを立てて回転させる装置に於いて、ディスクを正規の位置に容易に装着することを目的とする。

## 【0005】

【課題を解決する為の手段】 前面が開口(10)したキャビネット(1)内に、ディスクDを前面に対向して立てた状態で保持するシャーシ(3)を設け、該開口(10)を覆うフロントパネル(2)がキャビネット(1)の下端部に枢支(14)されたディスク記録再生装置に於いて、シャーシ(3)は上端部がキャビネット(1)内に枢支(13)され、フロントパネル(2)の回動面内にて回動自在に設けられ、シャーシ(3)の下端部と、フロントパネル(2)の自由端部の間には、フロントパネル(2)の開閉に応じて、シャーシ(3)を回動させるリンク(6)が架設され、フロントパネル(2)の開き方向の回転に応じて、シャーシ(3)は枢支部(13)を中心に回動し、開口(10)から露出する。

## 【0006】

【作用及び効果】 フロントパネル(2)が開くと、リンク(6)を介して、シャーシ(3)が枢支部(13)を中心に回動し、ディスクを保持する箇所がキャビネット(1)の開口(10)から露出する。この状態にて、ディスクを取り付けることができる。ディスクを取り付けるべき箇所が直接開口(10)から露出しているので、ディスクを取り付けるべき正規の位置を確認しながら、正しく装着することができる。

## 【0007】

【発明の実施の形態】 以下、本発明の一例を図を用いて詳述する。従来と同一構成については、同一符号を用いて、詳細な説明を省略する。図1は、ディスク記録再生装置の斜視図である。装置の本体であるキャビネット(1)は、上キャビネット(11)と下キャビネット(12)に別れており、両キャビネット(11)(12)間には開口(10)が開設されている。下キャビネット(12)には、開口(10)を覆

うフロントパネル(2)の下端部が枢支(14)され、また、上キャビネット(1)の下端部には、シャーシ(3)の上端部が枢支(13)されている。シャーシ(3)の背面側には、キャビネット(1)からストッパ(15)が突出し(図3参照)、シャーシ(3)が垂直状態から更に奥向きに回転することを止めている。

【0008】シャーシ(3)上には、ディスクDが載置されるトレイ(4)が設けられ、該トレイ(4)上にはディスクDを回転させるターンテーブル(7)が設けられている。ターンテーブル(7)上には、ディスクDの中心孔に10 嵌まり、ディスクDを保持するチャック部(5)が設けられ、トレイ(4)上のターンテーブル(7)の側方には、透孔(43)が開設されている。該透孔(43)からはディスクの半径方向に摺動するピックアップ(70)が露出している。ディスクDはトレイ(4)に載置された状態にて、図2に示すように、一部がトレイ(4)から突出するが、チャック部(5)により支持されているから、トレイ(4)から脱落することはない。チャック部(5)の構造については後記する。

【0009】図1に示すように、フロントパネル(2)の自由端部の両側には、小壁(21)(21)が立設し、各小壁(21)から嵌合軸(20)が外向きに突出する。また、シャーシ(3)の下端部からは、嵌め軸(30)が外向きに突出し、該嵌め軸(30)と嵌合軸(20)の間には、細長のリンク(6)が架設されて連結している。フロントパネル(2)の嵌合軸(20)は、リンク(6)の一端部に枢着されている。リンク(6)内には、リンク(6)の長手方向に沿って延びた長孔(60)が開設され、前記嵌め軸(30)は長孔(60)内を移動自在に嵌まる。20

【0010】図3は図1の右側面図である。トレイ(4)30 は、防振ゴム等からなる弾性片(44)(44)(44)を介して、シャーシ(3)上に取り付けられている。これにより、キャビネット(1)の外部からの振動が、直接ディスクDに伝わることはなく、記録再生が安定する。特に、キャビネット(1)の側方に、スピーカ等を設ける場合に有効である。フロントパネル(2)の開き完了状態にて、嵌め軸(30)は長孔(60)の上端に接し、リンク(6)とシャーシ(3)は同一傾斜面内に位置している。フロントパネル(2)の荷重がリンク(6)とシャーシ(3)に掛かっており、リンク(6)とシャーシ(3)は突っ張った状態となっ40 ている。シャーシ(3)上のトレイ(4)は開口(10)から露出して、上向きに傾いており、この状態にてディスクDをトレイ(4)上に載置できる。ディスクDには直径12cmと直径8cmの2種類があるが、トレイ(4)のチャック部(5)が上向きに露出しているから、何れのディスクを装着する場合でも、装着の際の作業性がよい。尚、図3に一点鎖線で示すように、リンク(6)が逆折れ状態となると、フロントパネル(2)を閉じ方向に回転させた時に、トレイ(4)がキャビネット(1)内に収納されないから、かかるリンク(6)の逆折れ状態を防ぐ規制片(図50

示せず)がシャーシ(3)に設けられている。

【0011】ディスクDは、中心部の孔がトレイ(4)上のチャック部(5)に嵌まって保持される。チャック部(5)は、所謂ボールチャッキング方式にて、ディスクを保持する。即ち、図6に示すように、チャック部(5)は筒体(50)の側面から複数の球(51)(51)を露出させ、該球(51)(51)を筒体(50)の内側に設けた圧縮バネ(52)(52)により外向きに付勢する。ディスクDの中心部が、チャック部(5)の下端部に嵌まった状態にて、球(51)(51)は、ディスクDの中心孔の周縁を外向きに押し、この状態でディスクDを保持している。

【0012】ディスクDを記録再生するには、フロントパネル(2)をキャビネット(1)との枢支部(14)を中心として閉じ方向に回転させる。前記の如く、リンク(6)は逆折れが防止されているから、フロントパネル(2)の回転に応じて、シャーシ(3)の嵌め軸(30)とリンク(6)の長孔(60)の端縁が一旦離れ、リンク(6)は自重により、嵌合軸(20)を中心に時計方向に回転する。シャーシ(3)とリンク(6)とが突っ張った状態が解除され、シャーシ(3)は反時計方向の回転が許される。シャーシ(3)は自重によりキャビネット(1)との枢支部(13)を中心に回転し、嵌め軸(30)が長孔(60)に沿って摺動する。図4に示すように、シャーシ(3)の背面が、ストッパ(15)に接した位置にて、シャーシ(3)は垂直状態になり、ディスクDは開口(10)に対向する。このとき、未だフロントパネル(2)は閉じていない。

【0013】更にフロントパネル(2)を閉じ方向に回転させると、長孔(60)が嵌め軸(30)に案内されて、リンク(6)は更に時計方向に回転する。図5に示すように、フロントパネル(2)の前面が、キャビネット(1)の前面に一致すると、係止機構(図示せず)により、フロントパネル(2)がキャビネット(1)に係止して、閉じ方向への更なる回転を規制する。嵌め軸(30)は斜めに傾いたリンク(6)に嵌まり、これによりシャーシ(3)及びトレイ(4)は前方向へのガタ付きを規制される。この状態でディスクDが記録再生される。尚、本例にあっては、図3に示すように、トレイ(4)が露出した状態でも、記録再生が可能であるが、フロントパネル(2)が開いたままであると、使用者がフロントパネル(2)に触れて、記録再生が不安定になる虞れがある。従って、フロントパネル(2)を閉じて記録再生を行なう。

【0014】本例に係わる装置にあっては、フロントパネル(2)が開いた状態にて、トレイ(4)がキャビネット(1)の開口(10)から露出しているから、ディスクをトレイ(4)に装着する際に、チャック部(5)を確認しながら、ディスクを取り付けることができる。従って、従来生じていた小径のディスクを取り付ける際に、正規の位置からズレて取り付けられる虞れはない。尚、フロントパネル(2)を開いて、ディスクを取り出す際には、フロントパネル(2)とキャビネット(1)との係止を外して、



上記と逆の動作を行ない、トレイ(4)を開口(10)から露出させれば良い。

【0015】上記例にあつては、トレイ(4)とシャーシ(3)を弾性片(44)を介して取り付けられているとしたが、トレイ(4)とシャーシ(3)を一体に取り付けてもよい。

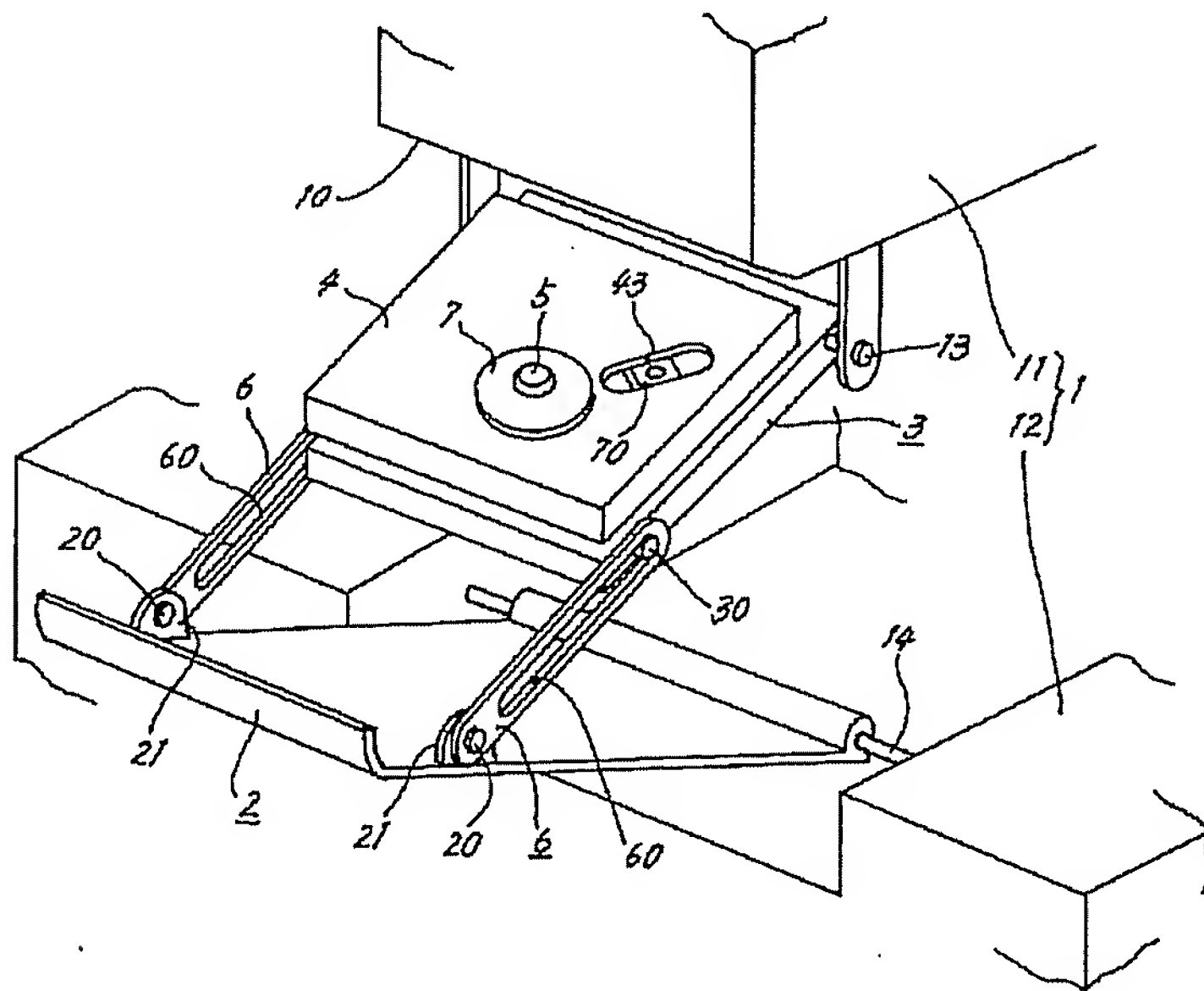
【0016】上記実施例の説明は、本発明を説明するためのものであって、特許請求の範囲に記載の発明を限定し、或は範囲を減縮する様に解すべきではない。又、本発明の各部構成は上記実施例に限らず、特許請求の範囲に記載の技術的範囲内で種々の変形が可能であることは勿論である。

#### 【図面の簡単な説明】

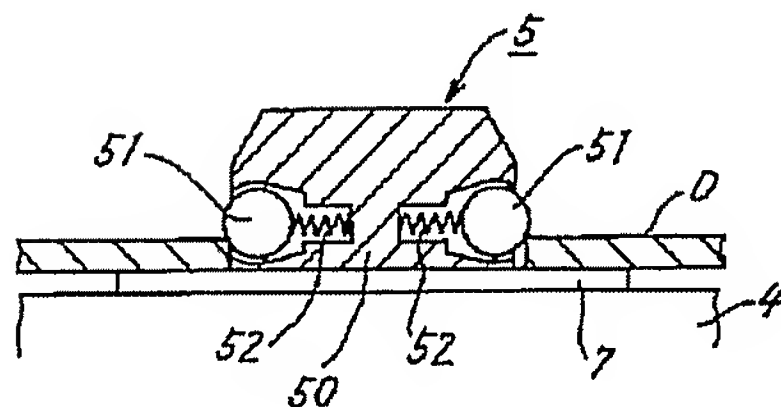
【図1】トレイが開いた状態のディスク記録再生装置の斜視図である。

【図2】トレイとシャーシが合わさった状態の正面図である。

【図1】



【図6】



【図3】図1を右側から見た断面図である。

【図4】フロントパネルを閉じんとする状態を示す断面図である。

【図5】フロントパネルが閉じた状態を示す断面図である。

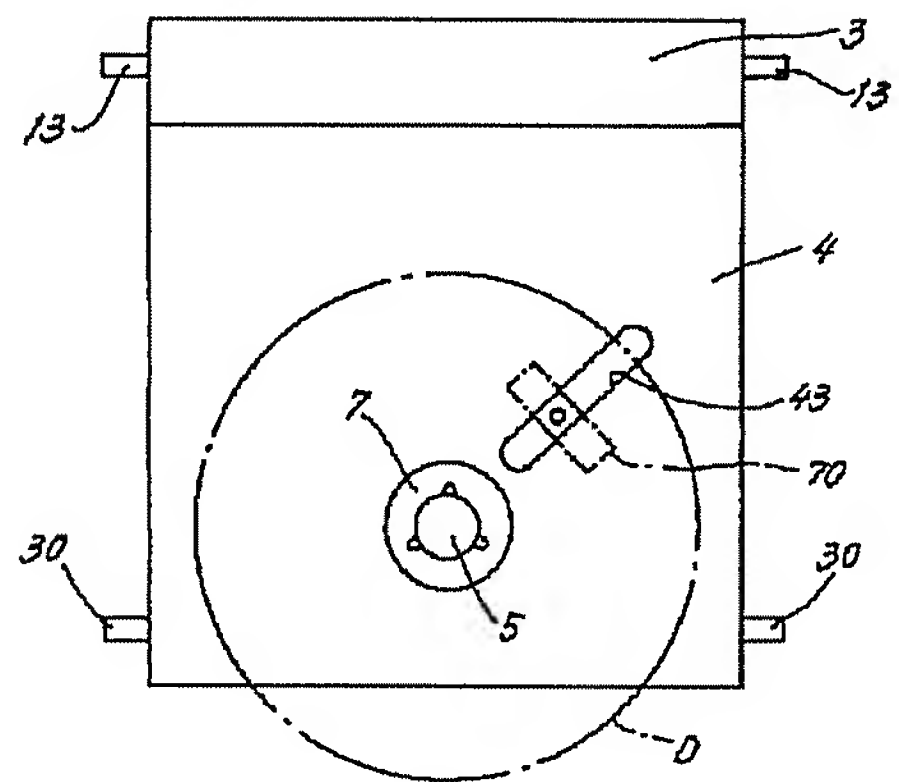
【図6】チャック部の断面図である。

【図7】従来のディスク記録再生装置の右側断面図で、(a)はフロントパネルが開いた状態を、(b)はフロントパネルが押し込まれ、ディスクをチャック部に取り付ける状態を示す。

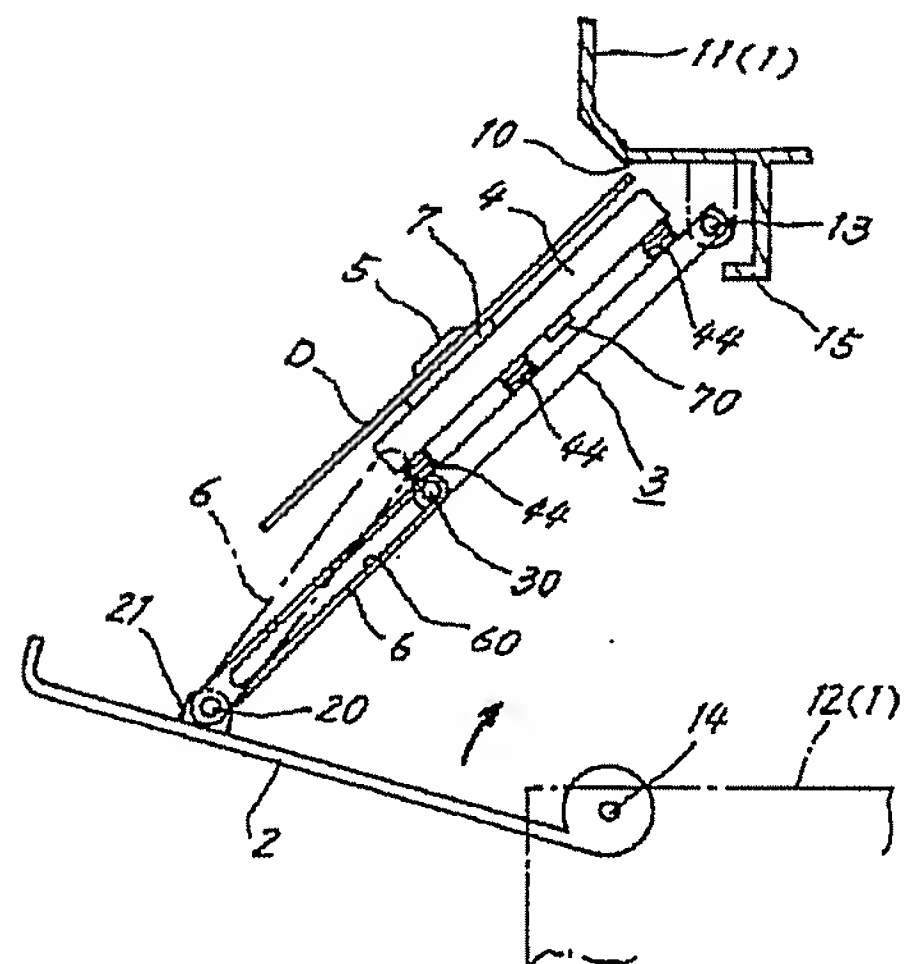
#### 【符号の説明】

- (1) キャビネット
- (2) フロントパネル
- (3) シャーシ
- (4) トレイ
- (44) 弾性片

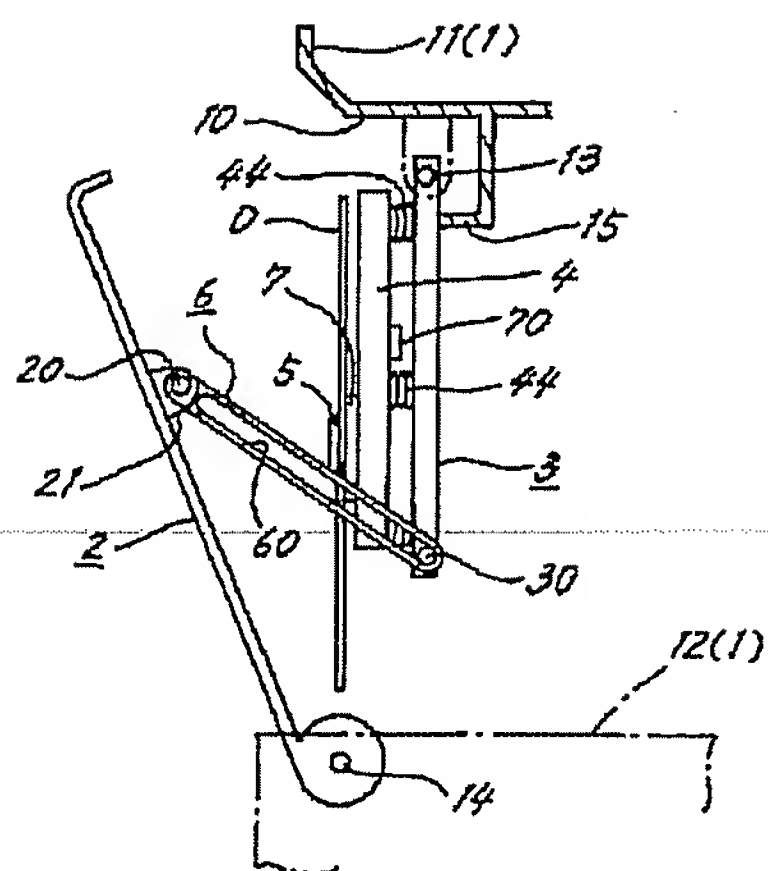
【図2】



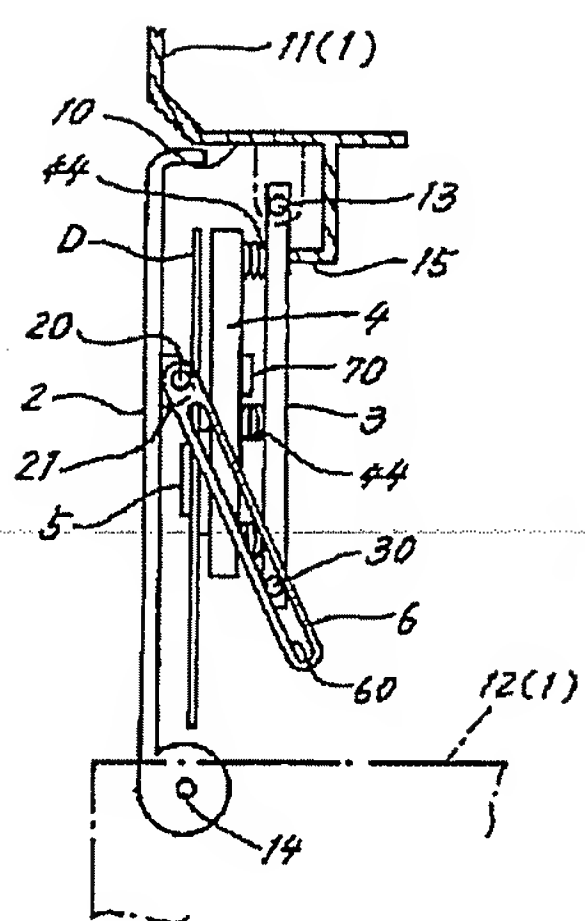
【図3】



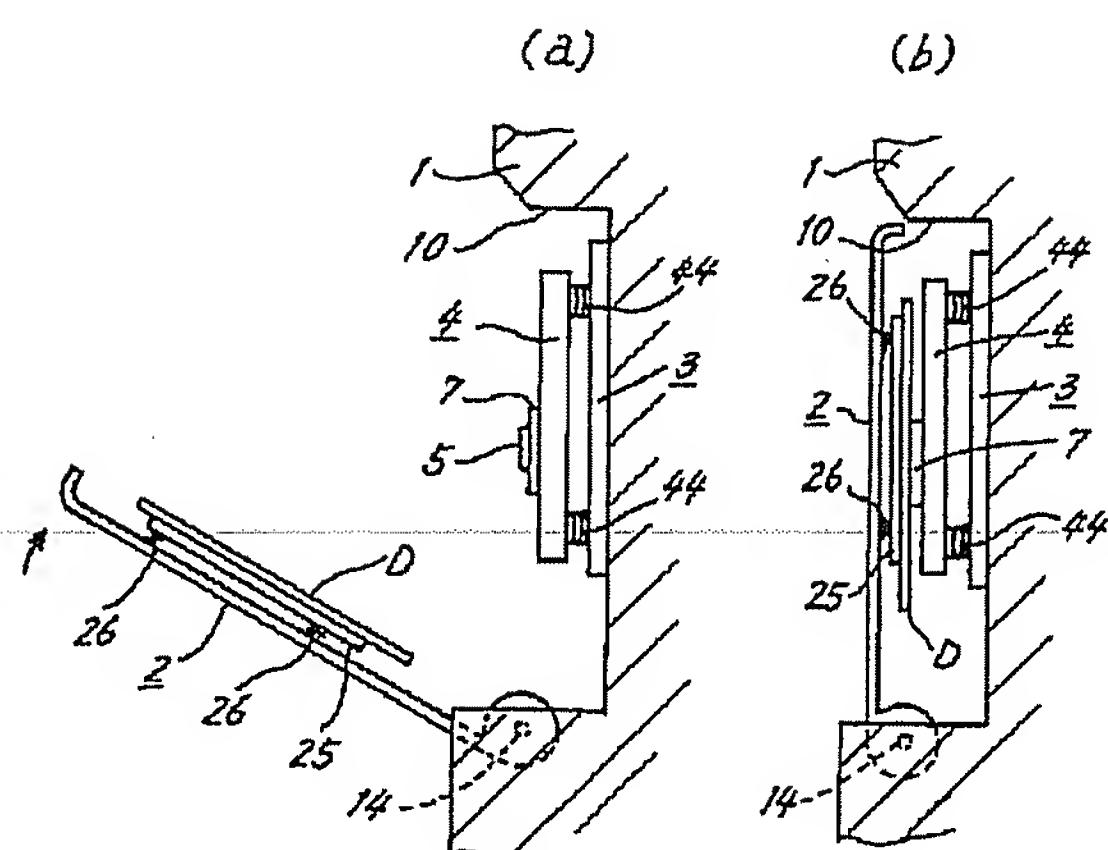
【図4】



【図5】



【図7】



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## CLAIMS

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[Claim(s)]

[Claim 1]In a cabinet (1) in which a front face carried out an opening (10), a chassis (3) held in the state where the disk D was made to counter a front face of a cabinet (1) up is provided, In disk recording playback equipment in which the wrap front panel (2) was supported pivotably by lower end part of a cabinet (1) in this opening (10) (14), A chassis (3) is supported pivotably in a cabinet (1) (13), is provided by upper bed part in a rotation side of the front panel (2), enabling free rotation, and A free end section of a chassis (3), Between free end sections of the front panel (2), according to opening and closing of the front panel (2), Disk recording playback equipment constructing a link (6) which rotates a chassis (3), rotating a chassis (3) centering on a supporting portion (13) according to rotation of an opening direction of the front panel (2), and exposing from an opening (10).

[Claim 2]The disk recording playback equipment according to claim 1 in which the disk D is held at a tray (4) on a chassis (3), and a chassis (3) supports a tray (4) via an elastic piece (44).

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[Translation done.]

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the disk recording playback equipment which stores a disk longitudinally and performs record reproduction in a cabinet.

[0002]

[Description of the Prior Art]In view of an exterior design and slimming down of a depth size, a disk is stood to this kind of disk recording playback equipment, it is rotated, and what performs record reproduction is known. Specifically, there are some which are shown in drawing 7 (a) and (b). This has provided the chassis (3) in the inner of the cabinet (1) in which the front face carried out the opening (10) vertically. On the chassis (3), the tray (4) holding the disk D is attached via the elastic piece (44) which comprises a rubber cushion etc., and (44). The wrap front panel (2) is supported pivotably (14), the disk D is held lightly, and puts an opening (10) on the rear face of this front panel (2), and the board (25) is attached to the lower end part of a cabinet (1) via a compression spring (26) and (26).

[0003]Parts required for the turntable (7) and record reproduction which make a tray (4) rotate the disk D are provided.

Where a disk is attached to a tray (4), the disk D rotates and record reproduction becomes possible.

On the turntable (7), it fits into the feed hole of the disk D closely, and the chuck part (5) holding a disk is provided. In order to attach a disk to a tray (4), a disk is carried, it puts on a board (25), and a closing direction is made to rotate the front panel (2), as shown in drawing 7 (a). As shown in drawing 7 (b), if the front panel (2) is pushed in still more lightly, it was energized by the compression spring (26) and carries, and after the front panel (2) has closed, a board (25) will turn the disk D to a chuck part (5), and will press it. The central part fits into a chuck part (5) closely, and the disk D is attached on a turntable (7). If a finger is lifted from the

front panel (2), it carries, and a board (25) will be slightly estranged from the disk D, and will not bar rotation of the disk D. In this state, a disk rotates and record reproduction is carried out.

[0004]

[Problem(s) to be Solved by the Invention]In the conventional device, a disk is attached to a chuck part (5) by laying a disk in the rear face of the front panel (2), making a closing direction rotate the front panel (2), turning a disk to a tray (4) and carrying out press energizing. In this case, when the position which laid the disk in the rear face of the front panel (2) shifts from a regular position, there is a possibility that a disk may not be attached to a chuck part (5). Although there are 12 cm in diameter and two 8-cm kinds of disks, especially the 8-cm disk of a byway has a high possibility that a position will be shifted and attached to the rear face of the front panel (2), and its a possibility that it may not be correctly attached to a chuck part (5) is strong. In the device which stands a disk and is rotated, an object of this invention is to equip a regular position with a disk easily.

[0005]

[Means for Solving the Problem]In a cabinet (1) in which a front face carried out an opening (10), a chassis (3) held where it countered a front face and the disk D is stood is provided, In disk recording playback equipment in which the wrap front panel (2) was supported pivotably by lower end part of a cabinet (1) in this opening (10) (14), A chassis (3) is supported pivotably in a cabinet (1) (13), is provided by upper bed part in a rotation side of the front panel (2), enabling free rotation, and A lower end part of a chassis (3), Between free end sections of the front panel (2), a link (6) which rotates a chassis (3) is constructed according to opening and closing of the front panel (2), according to rotation of an opening direction of the front panel (2), it rotates centering on a supporting portion (13), and a chassis (3) is exposed from an opening (10).

[0006]

[Function and Effect]If the front panel (2) opens, via a link (6), a chassis (3) will rotate centering on a supporting portion (13), and the part holding a disk will be exposed from the opening (10) of a cabinet (1). A disk can be attached in this state. It can equip correctly, checking the regular position which should attach a disk, since the part to which a disk should be attached is directly exposed from the opening (10).

[0007]

[Embodiment of the Invention]Hereafter, an example of this invention is explained in full detail using a figure. About the former and an identical configuration, detailed explanation is omitted using identical codes. Drawing 1 is a perspective view of disk recording playback equipment. The cabinet (1) which is a main part of a device has separated in the upper cabinet (11) and the lower cabinet (12), and the opening (10) is established between both cabinets (11) and



(12). The lower end part of the wrap front panel (2) is supported pivotably in an opening (10) by the lower cabinet (12) (14), and the upper bed part of the chassis (3) is supported pivotably by the lower end part of the upper cabinet (1) (13). In the back side of a chassis (3), the stopper (15) projected from the cabinet (1) (refer to drawing 3), and it has stopped that a chassis (3) rotates for the backs further from a perpendicular state.

[0008]On a chassis (3), the tray (4) in which the disk D is laid is provided, and the turntable (7) made to rotate the disk D is formed on this tray (4). On a turntable (7), it gets into the feed hole of the disk D, the chuck part (5) holding the disk D is provided, and the bore (43) is established in the side of the turntable (7) on a tray (4). From this bore (43), the pickup (70) which slides on the radial direction of a disk is exposed. Where the disk D is laid in a tray (4), as it is shown in drawing 2, a part projects from a tray (4), but since it is supported by the chuck part (5), it does not drop out of a tray (4). A postscript is carried out about the structure of a chuck part (5).

[0009]As shown in drawing 1, the narrow wall (21) and (21) sets up on both sides of the free end section of the front panel (2), and a fitting axis (20) projects outward from each narrow wall (21). From the lower end part of a chassis (3), it inserted in and the axis (30) projected outward, and the link (6) of thin length was constructed between this \*\*\*\*\* (30) and a fitting axis (20), and it has connected with it. The fitting axis (20) of the front panel (2) is pivoted in the end part of a link (6). in a link (6), the long hole (60) prolonged along with the longitudinal direction of a link (6) is established -- said -- it inserts in and an axis (30) fits in the inside of a long hole (60), enabling free movement.

[0010]Drawing 3 is a right side view of drawing 1. The tray (4) is attached on the chassis (3) via the elastic piece (44) which consists of rubber cushions etc., (44), and (44). Thereby, the vibration from the outside of a cabinet (1) does not get across to the disk D directly, and record reproduction is stabilized. It is effective when providing a loudspeaker etc. in the side of a cabinet (1) especially. It inserts in in the state of complete opening of the front panel (2), an axis (30) touches the upper bed of a long hole (60), and the link (6) and the chassis (3) are located in the same inclined plane. The load of the front panel (2) is applied to the link (6) and the chassis (3), and the link (6) and the chassis (3) are in the state of having been stubborn. It exposed from the opening (10), and the tray (4) on a chassis (3) leans upward, and can lay the disk D on a tray (4) in this state. Although there are two kinds (12 cm in diameter and 8 cm in diameter) of the disks D, since the chuck part (5) of a tray (4) is exposed upward, even when equipping with which disk, the workability in the case of wearing is good. If a link (6) will be in a reverse crease state as a dashed dotted line shows to drawing 3, Since a tray (4) is not stored in a cabinet (1) when a closing direction is made to rotate the front panel (2), the regulating piece (not shown) which prevents the reverse crease state of this link (6) is provided in the chassis (3).

[0011]The hole of the central part fits into the chuck part (5) on a tray (4), and the disk D is

held. A chuck part (5) holds a disk with what is called a ball chucking system. That is, as shown in drawing 6, a chuck part (5) exposes two or more balls (51) and (51) from the side of a barrel (50), and is energized outward with the compression spring (52) and (52) which formed this ball (51) and (51) inside the barrel (50). After the central part of the disk D has fitted into the lower end part of a chuck part (5), the ball (51) and (51) pushes the periphery of the feed hole of the disk D outward, and holds the disk D in this state.

[0012]In order to carry out record reproduction of the disk D, a closing direction is made to rotate the front panel (2) centering on a supporting portion (14) with a cabinet (1). Since the reverse crease is prevented like the above, according to rotation of the front panel (2), a chassis (3) inserts in a link (6), and the edge of the long hole (60) of an axis (30) and a link (6) once leaves it, and it rotates a link (6) clockwise focusing on a fitting axis (20) with prudence. The state where the chassis (3) and the link (6) were stubborn is canceled, and a chassis (3) is allowed counterclockwise rotation. It rotates centering on a supporting portion (13) with a cabinet (1) with prudence, and a chassis (3) is inserted in and an axis (30) slides on it along with a long hole (60). As shown in drawing 4, a chassis (3) will be in a perpendicular state in the position to which the back of the chassis (3) touched the stopper (15), and the disk D counters an opening (10). At this time, the front panel (2) is not yet closed.

[0013]If a closing direction is made to rotate the front panel (2), a long hole (60) will insert in, it will show around at an axis (30), and a link (6) will rotate further clockwise. If the front face of the front panel (2) is in agreement with the front face of a cabinet (1) as shown in drawing 5, according to a stopping mechanism (not shown), the front panel (2) will stop in a cabinet (1), and will regulate the further rotation to a closing direction. It inserts in, and an axis (30) fits into the aslant leaning link (6), and a chassis (3) and a tray (4) have this regulated with the backlash to front. Record reproduction of the disk D is carried out in this state. If it is in this example, as shown in drawing 3, also after the tray (4) has been exposed, a user touches [ that the front panel (2) has opened and ] the front panel (2), and although record reproduction is possible, there is a possibility that record reproduction may become unstable. Therefore, the front panel (2) is closed and record reproduction is performed.

[0014]A disk can be attached checking a chuck part (5), when equipping a tray (4) with a disk, since the tray (4) is exposed from the opening (10) of a cabinet (1) after the front panel (2) has opened if it is in the device involved in this example. Therefore, when attaching the disk of the byway produced conventionally, there is no possibility that it may shift from a regular position and may be attached. What is necessary is to remove a stop with the front panel (2) and a cabinet (1), to perform operation contrary to the above, and just to expose a tray (4) from an opening (10), when opening the front panel (2) and removing a disk.

[0015]If it was in the above-mentioned example, although the tray (4) and the chassis (3) are attached via an elastic piece (44), a tray (4) and a chassis (3) may be attached to one.

[0016]Explanation of the above-mentioned example is for explaining this invention, and it should not be understood so that the invention of a statement may be limited to a claim or the range may be reduced. As for each part composition of this invention, it is needless to say for various modification to be possible in a technical scope given not only in the above-mentioned example but a claim.

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**TECHNICAL FIELD**

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[Field of the Invention]This invention relates to the disk recording playback equipment which stores a disk longitudinally and performs record reproduction in a cabinet.

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## PRIOR ART

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[Description of the Prior Art] In view of an exterior design and slimming down of a depth size, a disk is stood to this kind of disk recording playback equipment, it is rotated, and what performs record reproduction is known. Specifically, there are some which are shown in drawing 7 (a) and (b). This has provided the chassis (3) in the inner of the cabinet (1) in which the front face carried out the opening (10) vertically. On the chassis (3), the tray (4) holding the disk D is attached via the elastic piece (44) which comprises a rubber cushion etc., and (44). The wrap front panel (2) is supported pivotably (14), the disk D is held lightly, and puts an opening (10) on the rear face of this front panel (2), and the board (25) is attached to the lower end part of a cabinet (1) via a compression spring (26) and (26).

[0003] Parts required for the turntable (7) and record reproduction which make a tray (4) rotate the disk D are provided.

Where a disk is attached to a tray (4), the disk D rotates and record reproduction becomes possible.

On the turntable (7), it fits into the feed hole of the disk D closely, and the chuck part (5) holding a disk is provided. In order to attach a disk to a tray (4), a disk is carried, it puts on a board (25), and a closing direction is made to rotate the front panel (2), as shown in drawing 7 (a). As shown in drawing 7 (b), if the front panel (2) is pushed in still more lightly, it was energized by the compression spring (26) and carries, and after the front panel (2) has closed, a board (25) will turn the disk D to a chuck part (5), and will press it. The central part fits into a chuck part (5) closely, and the disk D is attached on a turntable (7). If a finger is lifted from the front panel (2), it carries, and a board (25) will be slightly estranged from the disk D, and will not bar rotation of the disk D. In this state, a disk rotates and record reproduction is carried out.

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## EFFECT OF THE INVENTION

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[Function and Effect]If the front panel (2) opens, via a link (6), a chassis (3) will rotate centering on a supporting portion (13), and the part holding a disk will be exposed from the opening (10) of a cabinet (1). A disk can be attached in this state. It can equip correctly, checking the regular position which should attach a disk, since the part to which a disk should be attached is directly exposed from the opening (10).

[0007]

[Embodiment of the Invention]Hereafter, an example of this invention is explained in full detail using a figure. About the former and an identical configuration, detailed explanation is omitted using identical codes. Drawing 1 is a perspective view of disk recording playback equipment. The cabinet (1) which is a main part of a device has separated in the upper cabinet (11) and the lower cabinet (12).

The opening (10) is established between both cabinets (11) and (12).

The lower end part of the wrap front panel (2) is supported pivotably in an opening (10) by the lower cabinet (12) (14), and the upper bed part of the chassis (3) is supported pivotably by the lower end part of the upper cabinet (1) (13). In the back side of a chassis (3), the stopper (15) projected from the cabinet (1) (refer to drawing 3), and it has stopped that a chassis (3) rotates for the backs further from a perpendicular state.

[0008]On a chassis (3), the tray (4) in which the disk D is laid is provided, and the turntable (7) made to rotate the disk D is formed on this tray (4). On a turntable (7), it gets into the feed hole of the disk D, the chuck part (5) holding the disk D is provided, and the bore (43) is established in the side of the turntable (7) on a tray (4). From this bore (43), the pickup (70) which slides on the radial direction of a disk is exposed. Where the disk D is laid in a tray (4), as it is shown in drawing 2, a part projects from a tray (4), but since it is supported by the chuck part (5), it does not drop out of a tray (4). A postscript is carried out about the structure of a chuck part (5).

[0009]As shown in drawing 1, the narrow wall (21) and (21) sets up on both sides of the free

end section of the front panel (2), and a fitting axis (20) projects outward from each narrow wall (21). From the lower end part of a chassis (3), it inserted in and the axis (30) projected outward, and the link (6) of thin length was constructed between this \*\*\*\*\* (30) and a fitting axis (20), and it has connected with it. The fitting axis (20) of the front panel (2) is pivoted in the end part of a link (6). in a link (6), the long hole (60) prolonged along with the longitudinal direction of a link (6) is established -- said -- it inserts in and an axis (30) fits in the inside of a long hole (60), enabling free movement.

[0010]Drawing 3 is a right side view of drawing 1. The tray (4) is attached on the chassis (3) via the elastic piece (44) which consists of rubber cushions etc., (44), and (44). Thereby, the vibration from the outside of a cabinet (1) does not get across to the disk D directly, and record reproduction is stabilized. It is effective when providing a loudspeaker etc. in the side of a cabinet (1) especially. It inserts in in the state of complete opening of the front panel (2), an axis (30) touches the upper bed of a long hole (60), and the link (6) and the chassis (3) are located in the same inclined plane. The load of the front panel (2) is applied to the link (6) and the chassis (3), and the link (6) and the chassis (3) are in the state of having been stubborn. It exposed from the opening (10), and the tray (4) on a chassis (3) leans upward, and can lay the disk D on a tray (4) in this state. Although there are two kinds (12 cm in diameter and 8 cm in diameter) of the disks D, since the chuck part (5) of a tray (4) is exposed upward, even when equipping with which disk, the workability in the case of wearing is good. If a link (6) will be in a reverse crease state as a dashed dotted line shows to drawing 3, Since a tray (4) is not stored in a cabinet (1) when a closing direction is made to rotate the front panel (2), the regulating piece (not shown) which prevents the reverse crease state of this link (6) is provided in the chassis (3).

[0011]The hole of the central part fits into the chuck part (5) on a tray (4), and the disk D is held. A chuck part (5) holds a disk with what is called a ball chucking system. That is, as shown in drawing 6, a chuck part (5) exposes two or more balls (51) and (51) from the side of a barrel (50), and is energized outward with the compression spring (52) and (52) which formed this ball (51) and (51) inside the barrel (50). After the central part of the disk D has fitted into the lower end part of a chuck part (5), the ball (51) and (51) pushes the periphery of the feed hole of the disk D outward, and holds the disk D in this state.

[0012]In order to carry out record reproduction of the disk D, a closing direction is made to rotate the front panel (2) centering on a supporting portion (14) with a cabinet (1). Since the reverse crease is prevented like the above, according to rotation of the front panel (2), a chassis (3) inserts in a link (6), and the edge of the long hole (60) of an axis (30) and a link (6) once leaves it, and it rotates a link (6) clockwise focusing on a fitting axis (20) with prudence. The state where the chassis (3) and the link (6) were stubborn is canceled, and a chassis (3) is allowed counterclockwise rotation. It rotates centering on a supporting portion (13) with a



cabinet (1) with prudence, and a chassis (3) is inserted in and an axis (30) slides on it along with a long hole (60). As shown in drawing 4, a chassis (3) will be in a perpendicular state in the position to which the back of the chassis (3) touched the stopper (15), and the disk D counters an opening (10). At this time, the front panel (2) is not yet closed.

[0013]If a closing direction is made to rotate the front panel (2), a long hole (60) will insert in, it will show around at an axis (30), and a link (6) will rotate further clockwise. If the front face of the front panel (2) is in agreement with the front face of a cabinet (1) as shown in drawing 5, according to a stopping mechanism (not shown), the front panel (2) will stop in a cabinet (1), and will regulate the further rotation to a closing direction. It inserts in, and an axis (30) fits into the aslant leaning link (6), and a chassis (3) and a tray (4) have this regulated with the backlash to front. Record reproduction of the disk D is carried out in this state. If it is in this example, as shown in drawing 3, also after the tray (4) has been exposed, a user touches [ that the front panel (2) has opened and ] the front panel (2), and although record reproduction is possible, there is a possibility that record reproduction may become unstable. Therefore, the front panel (2) is closed and record reproduction is performed.

[0014]A disk can be attached checking a chuck part (5), when equipping a tray (4) with a disk, since the tray (4) is exposed from the opening (10) of a cabinet (1) after the front panel (2) has opened if it is in the device involved in this example. Therefore, when attaching the disk of the byway produced conventionally, there is no possibility that it may shift from a regular position and may be attached. What is necessary is to remove a stop with the front panel (2) and a cabinet (1), to perform operation contrary to the above, and just to expose a tray (4) from an opening (10), when opening the front panel (2) and removing a disk.

[0015]If it was in the above-mentioned example, although the tray (4) and the chassis (3) are attached via an elastic piece (44), a tray (4) and a chassis (3) may be attached to one.

[0016]Explanation of the above-mentioned example is for explaining this invention, and it should not be understood so that the invention of a statement may be limited to a claim or the range may be reduced. As for each part composition of this invention, it is needless to say for various modification to be possible in a technical scope given not only in the above-mentioned example but a claim.

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## TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention]In the conventional device, a disk is attached to a chuck part (5) by laying a disk in the rear face of the front panel (2), making a closing direction rotate the front panel (2), turning a disk to a tray (4) and carrying out press energizing. In this case, when the position which laid the disk in the rear face of the front panel (2) shifts from a regular position, there is a possibility that a disk may not be attached to a chuck part (5). Although there are 12 cm in diameter and two 8-cm kinds of disks, especially the 8-cm disk of a byway has a high possibility that a position will be shifted and attached to the rear face of the front panel (2), and its a possibility that it may not be correctly attached to a chuck part (5) is strong. In the device which stands a disk and is rotated, an object of this invention is to equip a regular position with a disk easily.

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**MEANS**

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[Means for Solving the Problem]In a cabinet (1) in which a front face carried out an opening (10), a chassis (3) held where it countered a front face and the disk D is stood is provided, In disk recording playback equipment in which the wrap front panel (2) was supported pivotably by lower end part of a cabinet (1) in this opening (10) (14), A chassis (3) is supported pivotably in a cabinet (1) (13), is provided by upper bed part in a rotation side of the front panel (2), enabling free rotation, and A lower end part of a chassis (3), Between free end sections of the front panel (2), a link (6) which rotates a chassis (3) is constructed according to opening and closing of the front panel (2), according to rotation of an opening direction of the front panel (2), it rotates centering on a supporting portion (13), and a chassis (3) is exposed from an opening (10).

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1]It is a perspective view of the disk recording playback equipment in the state where the tray opened.

[Drawing 2]It is a front view in the state where the tray and the chassis were put together.

[Drawing 3]It is the sectional view which looked at drawing 1 from right-hand side.

[Drawing 4]the front panel -- it is going to close -- it is a sectional view showing a state.

[Drawing 5]It is a sectional view showing the state where the front panel closed.

[Drawing 6]It is a sectional view of a chuck part.

[Drawing 7]With the right-hand side sectional view of conventional disk recording playback equipment, the state where the front panel opened is stuffed into the front panel, and, as for (b), (a) shows the state of attaching a disk to a chuck part.

[Description of Notations]

- (1) Cabinet
- (2) Front panel
- (3) Chassis
- (4) Tray
- (44) Elastic piece

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[Translation done.]

## \* NOTICES \*

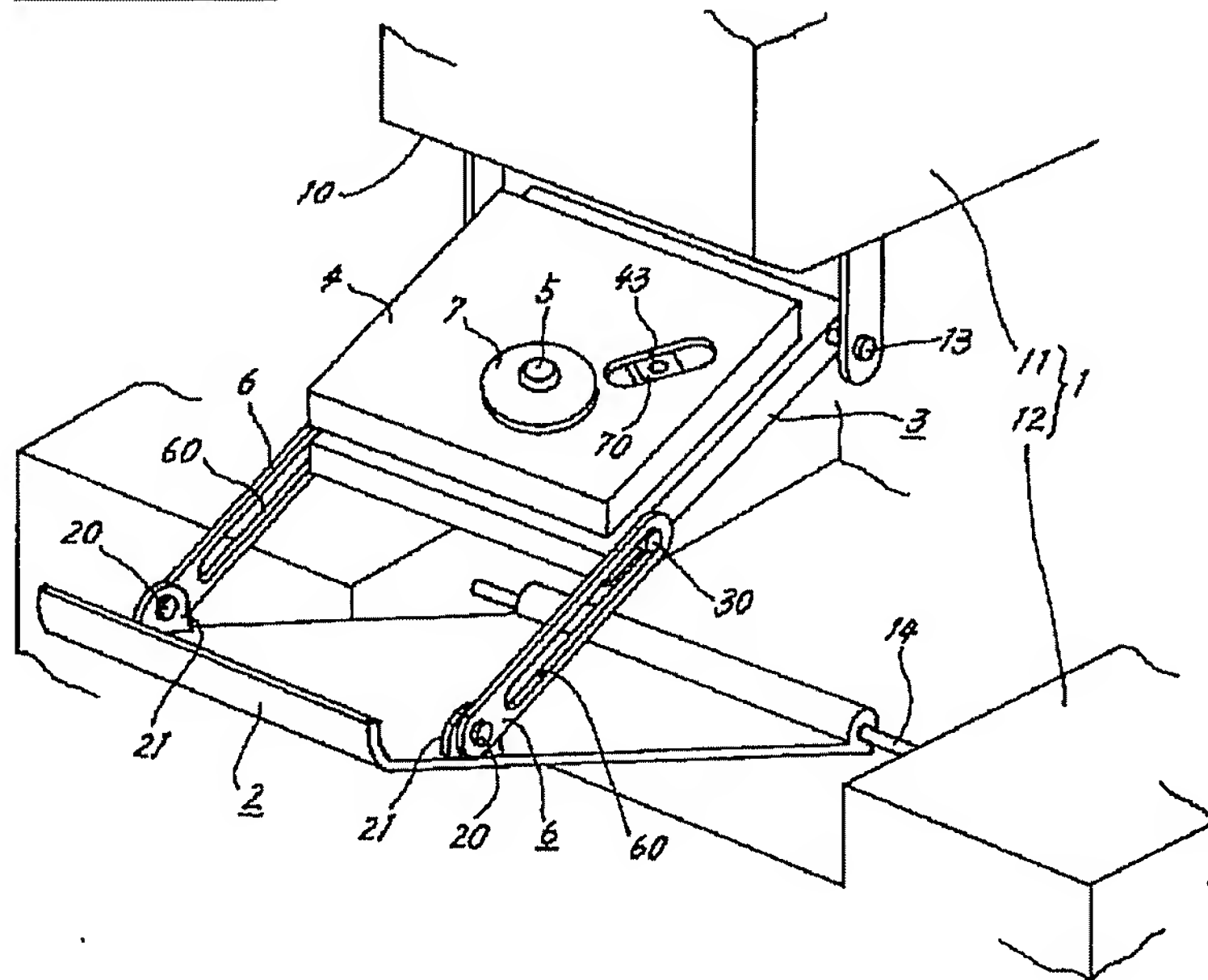
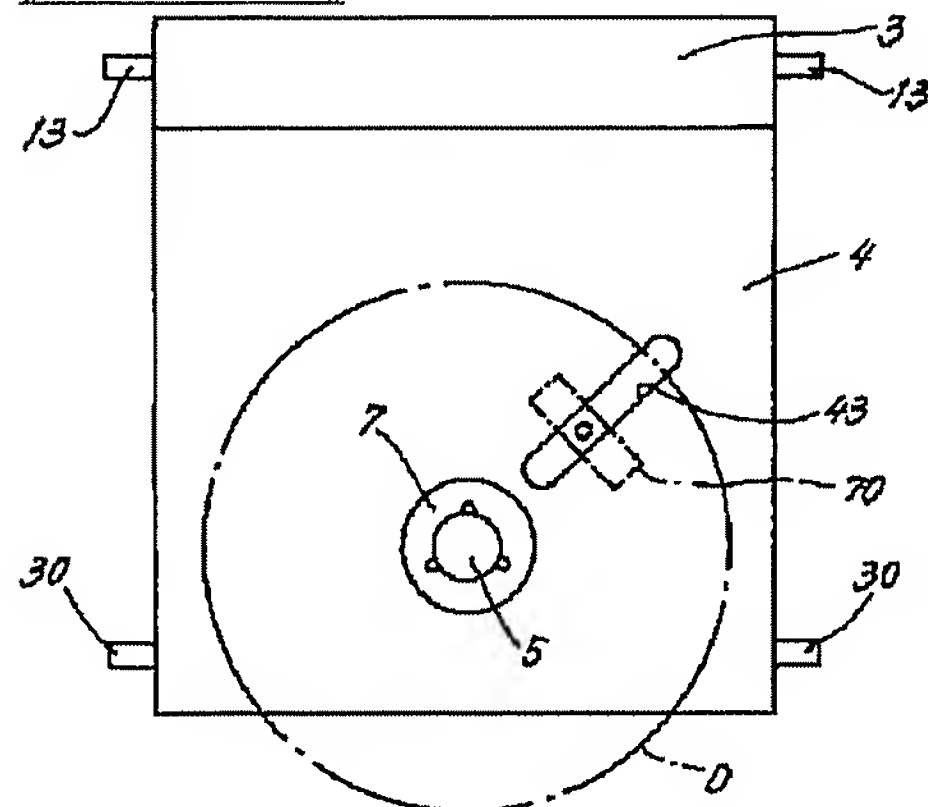
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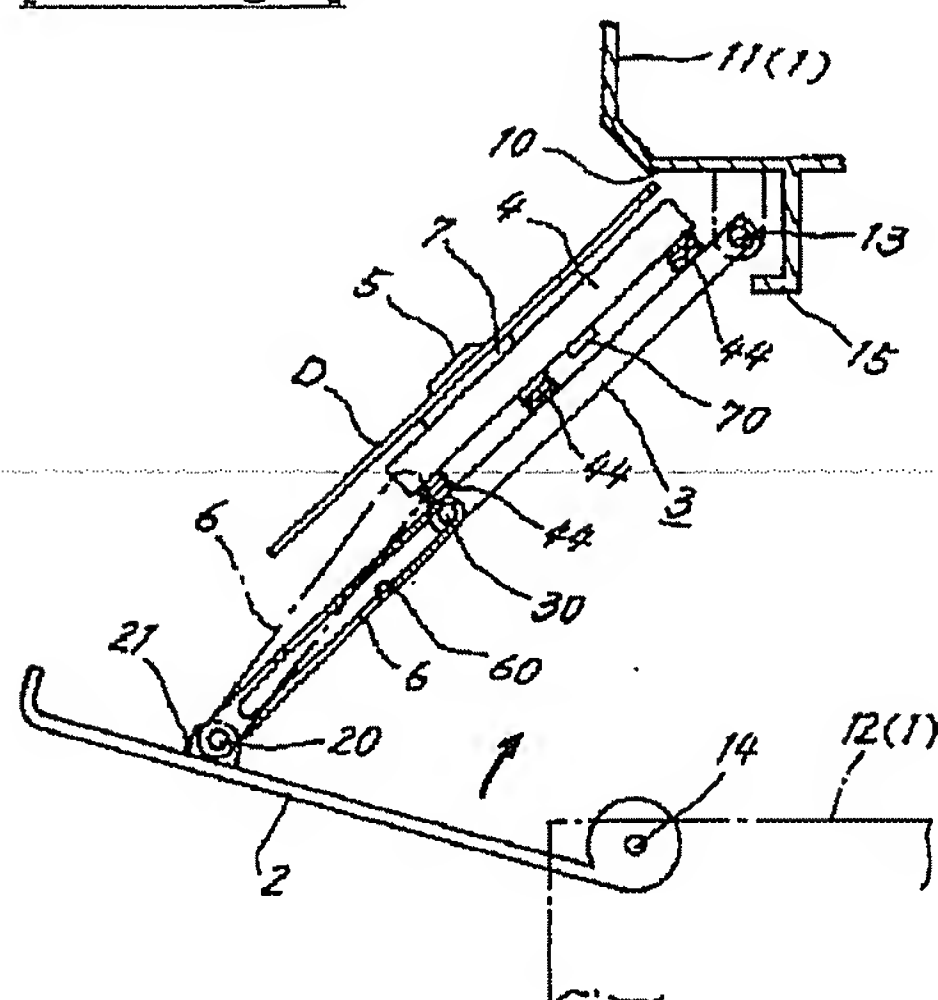
**DRAWINGS**


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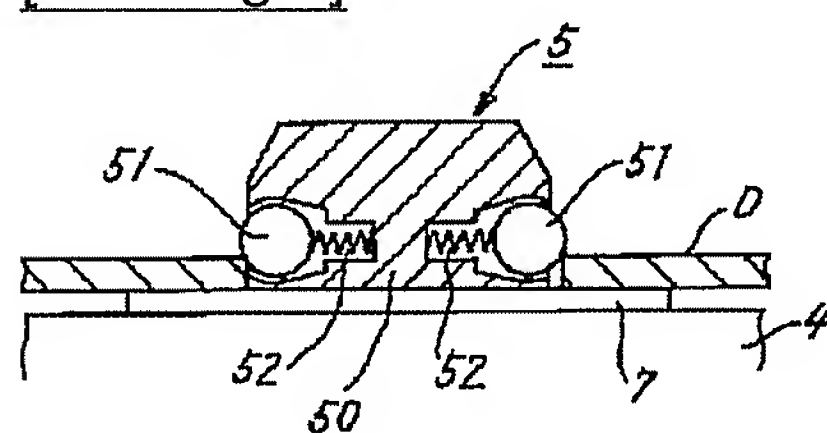
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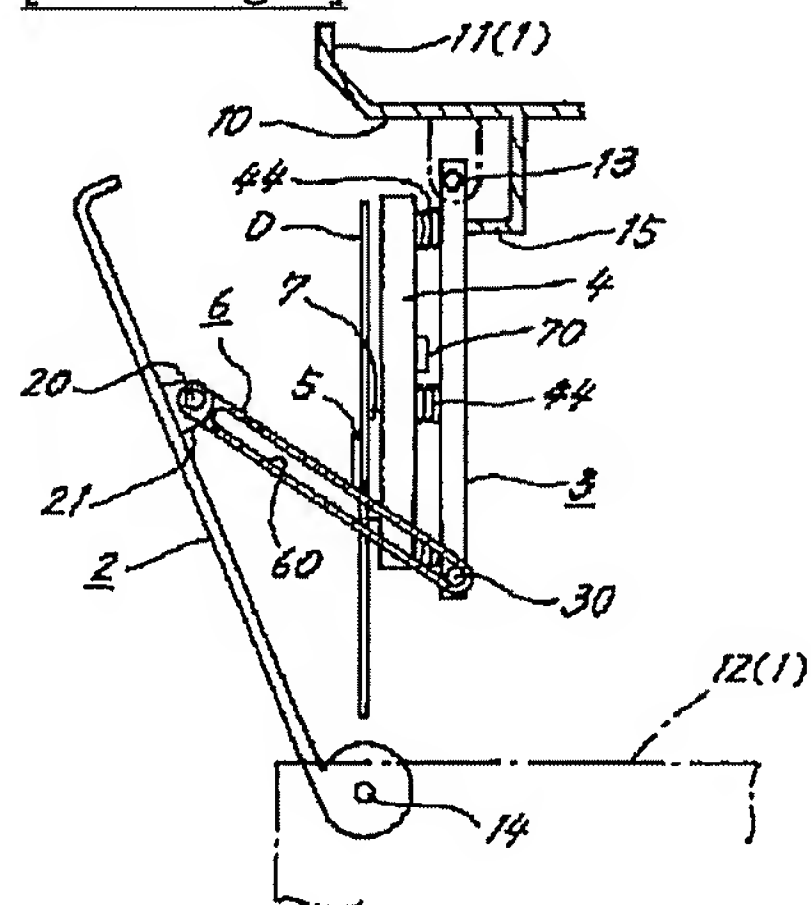
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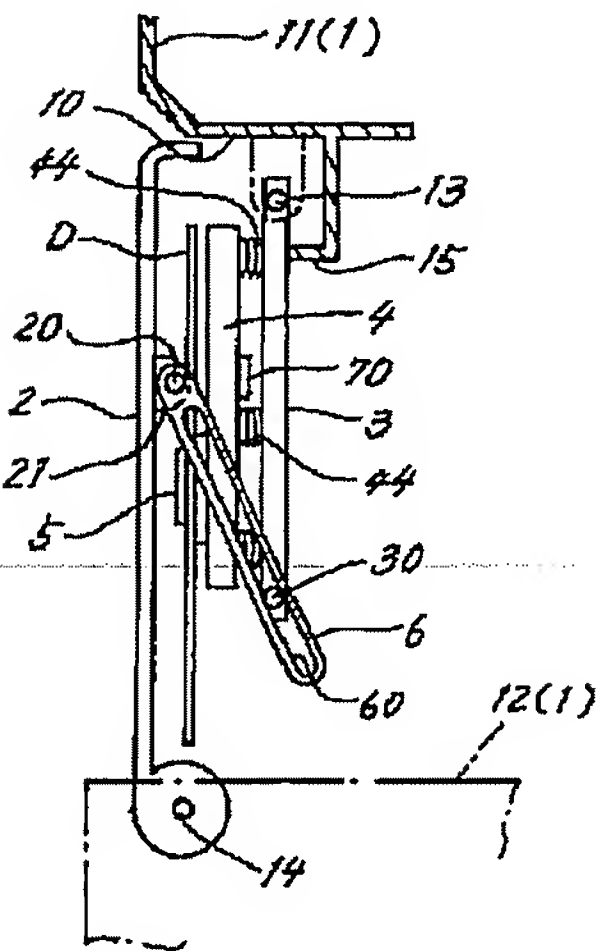
[Drawing 6]



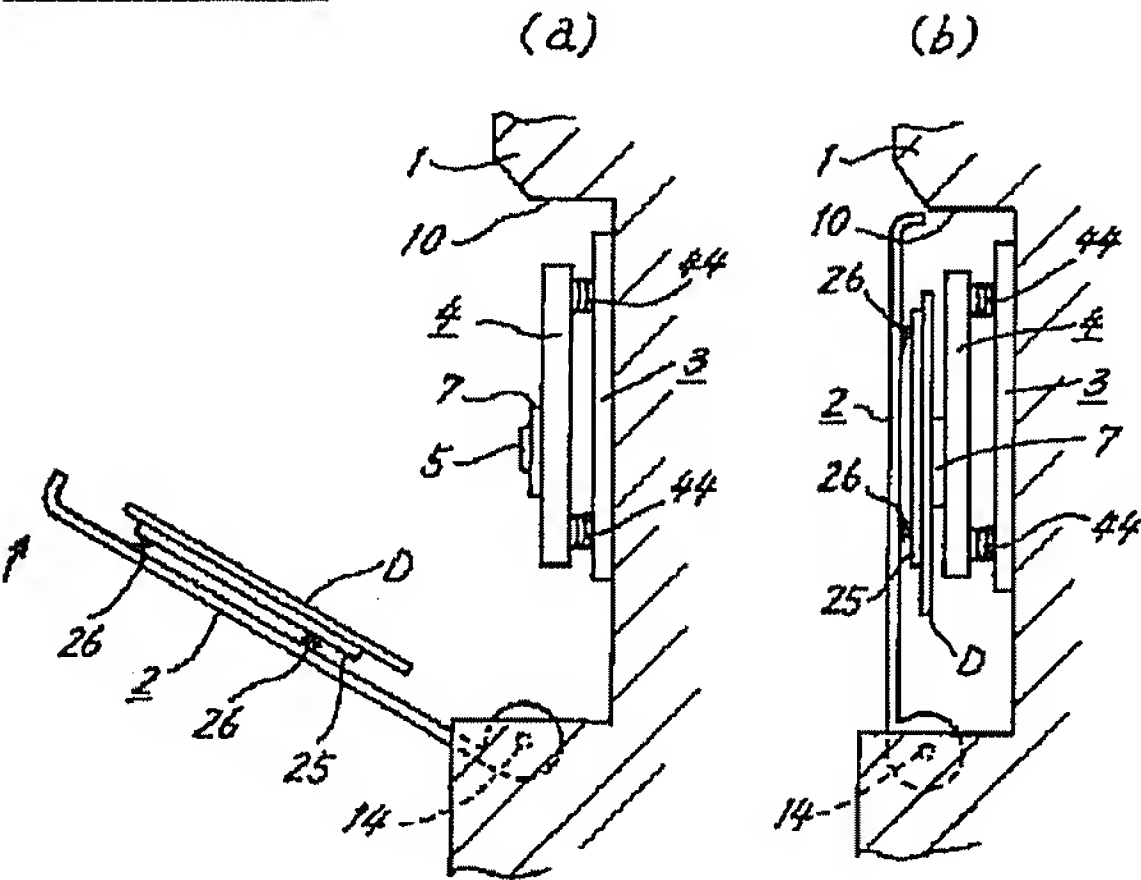
[Drawing 4]



[Drawing 5]



[Drawing 7]



[Translation done.]